REMARKS

Claims 4-20 directed to a non-elected invention have been canceled. Applicant reserves the right to file a Divisional application directed to the canceled subject matter.

Claims 1-3 were rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent 6,600,646.

In response, the common assignee submits herewith a Terminal Disclaimer disclaiming the terminal part of any patent granted on the above-identified application which would extend beyond the expiration of the full statutory term as presently shortened by any terminal disclaimer of U.S. Patent 6,600,646.

Withdrawal of the foregoing rejection is respectfully requested.

Claims 1-3 were rejected under 35 U.S.C. § 112, first paragraph. The Examiner considered that the CV values introduced into claim 1 do not find support in the specification as originally filed. In this regard, the Examiner noted that the claimed CV value is given per unit mass (g), whereas no such per unit mass calculations or values are given in the specification.

Applicant respectfully traverses for the following reasons.

It is well known and conventional for those skilled in the art to express the CV value as "μFV/g", and the LC value as "μA/g". The specific leak current index is expressed as LC/(CxV) = "μA/μFV".

The sintered bodies subjected to testing in the present specification had a mass of approximately 0.1 g (page 13, lines 7-8 up), and were subjected to a formation voltage of 20V

(page 13, line 5 up). Thus, for example, the powder of Example 11 shown in Table 1 at page 15 of the specification had a specific CV value of:

$$(970\ \mu F)(20V)/0.1g = 194{,}000\ \mu FV/g$$

Similarly, the CV value calculated from the data of Example 8 is 89,600 μFV/g.

Thus, for clarification, but without narrowing the scope of the claims, claim 1 has been amended to read "89,600 μFV/g to 194,000 μFV/g" in place of the present claim language.

As shown above, the CV values of amended claim 1 (both lower and upper limits) are fully supported by the specification as originally filed, and withdrawal of the foregoing rejection under 35 U.S.C. § 112, first paragraph, is respectfully requested.

Claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 4,954,169 to Behrens in view of U.S. Patent 6,051,044 to Fife. The reasons for rejection remain the same as set forth in the previous Office Action. The rejection was maintained because the calculated CV values of the niobium powder of the invention have different units and therefore are said to not be comparable to the CV values of the powder of Behrens.

Applicant traverses, and respectfully requests the Examiner to reconsider for the following reasons.

As discussed in the remarks portion of the Amendment filed September 7, 2004, the present claims patentably define over Behrens and Fife in terms of both (i) CV value, and (ii) impurity content. Furthermore, there is nothing in the prior art which either suggests the claimed niobium powder and/or teaches how to prepare the claimed niobium powder.

By way of review, the niobium powder of the present invention is prepared as follows. In a first process disclosed in Examples 1-3, potassium fluoroniobate is reduced and the thus-obtained reduced product is then pulverized using a ball mill to give a finely divided powder. In a second process disclosed in Examples 4-11, a niobium ingot is hydrogenated and then pulverized, and the pulverized product is again hydrogenated and further pulverized to give a finely divided powder. The step of pulverization into a finely divided powder in the two processes is important for obtaining a niobium powder having a large CV value.

In Behrens, a tantalum powder is made by reducing potassium heptafluorotantalate (K_2TaF_7), but, a step of pulverizing the reduced product into a finely divided powder is not adopted, as seen from the description of the examples.

In Fife, a niobium ingot is hydrided and the thus-obtained embrittled ingot is crushed into an angular powder. The angular powder is milled into a flaked niobium powder.

The tantalum powder disclosed in the Examples of Behrens had a CV value in the range of 22.5 mC/g (=22,500 μFV/g) to 30.0 mC/g (=30,000 μFV/g) (see columns 7-8, Table 4). The CV value of the niobium powder disclosed in the Examples of Fife is not larger than 45,400 CV/g (the largest CV value is 45,400 CV/g in Table 2, sample in the third line). Fife teaches that the niobium powder has a CV value in the range of 30,000 to 61,000 CV/g (column 6, lines 64-67), but no example having a CV value exceeding 45,400 CV/g is given. These CV values specifically disclosed in the examples of Fife and Behrens are substantially lower than the CV value required by present claim 1.

The Examiner is respectfully requested to compare the tantalum powder of Example 1 of Behrens with the niobium powder of Example 10 of the present specification. Both the tantalum powder and the niobium powder have the same particle size (0.7 μm; see Behrens, column 6, Table 1, Example 1, and Present Invention, page 16, Table 1, Example 10). However, the CV value of the tantalum powder is 25,500 μFV/g (25.5 mC/g; Behrens, columns 7-8, Table 4, Example 1). In contrast, the CV value of the niobium powder is 118,000 μFV/g (590 μF x 2μa x 100) (present specification, page 16, Table 1, Example 10). That is, the niobium powder of the present invention has a CV value that is about 5 times that of the tantalum powder of Behrens.

For the Examiner's reference, the CV values of the niobium powder as measured in the working Examples of the present specification can be calculated, as shown above, and expressed in units of μFV/g as follows.

Table 1, at page 15 of the Present Specification

	μFV/g
Comparative Example 1	45000
Example 1	45400
Example 2	44800
Example 3	44000
Comparative Example 2	44400
Comparative Example 3	44200
Comparative Example 4	34800
Comparative Example 5	34600
Comparative Example 6	35000
Example 4	62000
Example 5	61600

Example 6	61200
Example 7	90000
Example 8	89600
Example 9	90800
Example 10	118000
Example 11	194000

Examples 7-11 are examples meeting the requirements of present claim 1.

On the other hand, the CV values of tantalum powders reported in the working examples of Behrens (Table 4 in columns 7 and 8) are calculated as follows.

Note, "specific charge" in Behrens = "CV value"

mC (milli-coulomb) = 10^{-3} FV = 10^{3} μFV

	μFV/g
Example 1	25500
Example 2	28500
Example 3	30000
Example 4	28500
Example 5	26000
Comparative Example	22500

Thus, the tantalum powder disclosed in the working examples of Behrens had a CV value in the range of 22,500 μFV/g to 30,00 μFV/g, well below the claimed lower limit of 89,600 μFV/g.

Fife '044 teaches that the niobium powder has a CV value in the range of 30,000 to about 61,000 CV/g (=μFV/g) column 6, lines 64-67), but gives no example of a CV value exceeding

45,400 CV/g (=μFV/g) (Table 2, sintering temperature: 1300°C [sinter temperature in the examples of the present invention is 1300°C]). The largest CV value in the examples of Fife '044 is 45,400 CV/g (=μFV/g) at a sintering temperature of 1300°C (Table 2, third line).

For the above reasons alone relative to the claimed CV value, it is respectfully submitted that the present claims are patentable over the cited prior art.

As to the limitation of claim 1 which requires that the amount of each element M (selected from iron, nickel, cobalt, silicon, sodium, potassium and magnesium) is not more than 100 ppm by weight, the Examiner presumed that the rare earth metal powder of Behrens did not contain Si or Co in an amount exceeding 100 ppm by weight. For this reason, the Examiner did not consider the Declaration Under 37 C.F.R. § 1.132 of Kazumi Naito dated June 25, 2003 to be persuasive.

However, as discussed in a previous Response, there is no way to ascertain the Si or Co content from the disclosure of Behrens. In the present invention, a niobium powder having reduced amounts of impurities is obtained by thoroughly washing the powder with an alkali and specific acid, or further, with aqueous hydrogen peroxide. However, it cannot be ascertained whether Behrens adopted a washing procedure to the extent that impurities are reduced to 100 ppm or lower.

In the Declaration Under 37 C.F.R. § 1.132 dated June 25, 2003, Applicant demonstrated that a Si and Co impurity content of not more than 100 ppm by weight is critical for achieving the effects for the invention. For this additional reason, it is respectfully submitted that the present claims patentably define over Behrens and Fife in terms of impurity content in addition

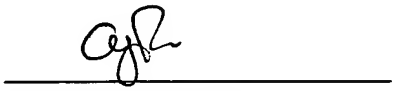
to CV value, and withdrawal of the foregoing rejection under 35 U.S.C. § 103(a) is respectfully requested.

Withdrawal of all rejections and allowance of claims 1-3 is earnestly solicited.

In the event that the Examiner believes that it may be helpful to advance the prosecution of this application, the Examiner is invited to contact the undersigned at the local Washington, D.C. telephone number indicated below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



Abraham J. Rosner
Registration No. 33,276

SUGHRUE MION, PLLC
Telephone: (202) 293-7060
Facsimile: (202) 293-7860

WASHINGTON OFFICE
23373
CUSTOMER NUMBER

Date: February 23, 2005